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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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GENERAL NUMBER 00757
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60611

EXAMINER

HAN, QI

ART UNIT	PAPER NUMBER
2654	10

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/462,127

Applicant(s)

NAKA, NOBUHIKO

Examiner

Qi Han

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/2/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-36 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/02/2004 (pre-amendment) has been entered.

Response to Amendment

2. The Applicant(s) cancelled all previous claims 1-16, and added new claims 17-36 (see paper 18, pages 2-4), and filed the RCE examination request (Paper 17) on 01/02/2004.

Response to Arguments

3. Applicant's arguments with respect to claims 17-36 have been considered but are moot in view of the new ground(s) of rejection since the arguments are totally based on the newly added claims.

Claim Objections

Claims 28 is objected to because the scope of the newly added claim having the limitation of "wherein the parameters are created under a coding scheme selected from a group **consisting of ...**" is not same as disclosed in the original specification (see specification, page 9,

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paragraph 6). Appropriate correction is required. The claimed limitation will be treated as “wherein the speech decoder is applied to a coding scheme selected from a group comprising ...”.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 17-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 17, the limitations of “a first-stage decoding circuit” and “a second-stage circuit” recited in the newly added claim introduce new subject matter(s), because the limitations are not described in the original specification (the closest disclosure is referenced in specification: page 4, paragraph 5 to page 6, paragraph 8), nor disclosed in the drawings.

Regarding **claims 18-28**, they depend on claim 17 and include all the limitations of their parent claim(s), respectively, including the new subject matter in claim 17.

Claim Rejections - 35 USC § 102

Rejection under 35 U.S.C. 102(e), Patent Application Publication or Patent to Another with Earlier Filing Date, in view of American Investors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application of patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 17-23, 27-32 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by SALAMI et al. (IDS: "Design and description of CS-ACELP: a toll quality 8 kb/s speech coder", IEEE Transaction on speech and audio processing, vol. 6, No.2, March 1998, page 116-130) hereinafter referenced as SALAMI.

As per **claim 17**, as best understood in view of rejection under 35 USC 112 1st (see above), SALAMI discloses design and description of CS-ACELP (conjugate-structure algebraic code excited linear prediction) speech coder/decoder, comprising:

a first-stage decoding circuit that generates excitation vectors from the transmitted parameters (Fig. 2, combination of function blocks: 'decode adaptive code-vector', 'decode the gains', and 'decode fixed code-vector'; and page 118, TABLE I);

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a second-stage decoding circuit that performs a speech synthesis, using the excitation vectors, to obtain a reconstructed speech (Fig. 2, combination of function blocks: 'construct excitation', 'decode LSP'... 'LP synthesis filter', 'post-filter', high pass & up-scaling');

an error detector that detects transmission errors in the transmitted parameters (page 125, left column, paragraphs 2 and 6, 'a parity bit P0', 'an error concealment procedure'); and

a vector modifier located between the first-stage and second-stage circuits that enhances perceptual quality of the reconstructed speech, wherein the vector modifier modifies at least one of the excitation vectors in such a manner as to obtain a variable degree of enhancement determined based on the transmission errors detected by the error detector (Fig. 2 and page 122, right column, paragraphs 2 and page 125, section III. A, 'concealment of frame erasures (interpreted as enhancement)', 'attenuation', 'the filter $P(z)=1/(1-\beta z^{-T})$ ', wherein the filter is a function of variables gain β and integer part of pitch lag T and the gain and pitch lag would be changed during the concealment based on the condition of the detected frame errors, so that the replacement excitation are vary, which is interpreted as a variable degree of enhancement).

As per **claim 18** (depending on claim 17), SALAMI further discloses an adaptive code decoder and a fixed code decoder (Fig. 2, combination of function blocks: 'decode adaptive code-vector' and 'decode fixed code-vector').

As per **claim 19** (depending on claim 18), SALAMI further discloses that the vector modifier modifies excitation vectors output from the fixed code decoder (Fig. 2, Fig. 2 and page 125, section III. A, the filter 'P(z)' and 'update with an attenuation').

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As per **claim 20** (depending on claim 17), SALAMI further discloses that the second-stage decoding circuit comprises a speech synthesis filter excited by the excitation vectors (Fig. 2, vector $v(n)$ and $c(n)$, 'construct excitation', 'LP synthesis filter').

As per **claim 21** (depending on claim 20), SALAMI further discloses that the second-stage decoding circuit further comprises at least one post-processing filter (Fig. 2, 'postfilter').

As per **claim 22** (depending on claim 17), SALAMI further discloses that the degree of enhancement performed by the vector modifier decreases as the transmission errors increase (page 125, section III. A, equation (53) suggests that the enhancement would be decreased when error frame s are increased).

As per **claim 23** (depending on claim 22), SALAMI further discloses that the parameters are transmitted in discrete time series corresponding to speech frames (page 118, left column, paragraph 1 and TABLE I, '10 ms frame', 'the number of bits for each 5 ms', which suggests the parameters transmitted in discrete time series).

As per **claim 27** (depending on claim 17), SALAMI further discloses that the vector modifier comprises one or more preprocessing filters with different degrees of enhancement (Fig. 2 and page 122, right column, paragraphs 2 and page 125, section III. A, 'concealment of frame erasures (interpreted as enhancement)', 'attenuation', 'the filter $P(z)=1/(1-\beta z^{-T})$ ', and equation (53), wherein the filter is a function of variables gain β and integer part of pitch lag T , and the gain and pitch lag would be changed during the concealment based on the condition of the detected frame errors, so that the replacement excitation are vary, which is interpreted as different degrees of enhancement).

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As per **claim 28** (depending on claim 24), as best understood in view of disclosure objection (see above), SALAMI further discloses code-excited linear prediction (CELP) coding and CS-ACELP, linear spectral pair (LSP), linear prediction (LP) and LPC, which corresponds to the claimed "a coding scheme selected from a group consisting of (comprising) a Conjugate Structure Algebraic Code Excited Linear Prediction (CS-ACELP) scheme, an Adaptive Predictive Coding (APC) scheme, an Adaptive Predictive Coding with Adaptive Bit Allocation (APC-AB) scheme, an APC-MLQ scheme, an Adaptive Transform Coding (ATC) scheme, a Multi Pulse Coding (MPC) scheme, a Linear Prediction Coding (LPC) scheme, a Residual Excited Linear Prediction Coding (KELP) scheme, a Code Excited Linear Prediction Coding (CELP) scheme, a Line Spectrum Pair Coding (LSP) scheme, and a PARCOR scheme"

As per **claims 29-32 and 36**, they recite a speech decoding method. The rejection is based on the same reason described for claims 17, 19, 22-23 and 27, respectively, because claims 29-32 and 36 recite same or similar limitation(s) as claims 17, 19, 22-23 and 27, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 24-26 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over SALAMI in view of MANO et al. (IDS: JP 06-012095, and with English Translation hereinafter abbreviated as ET) hereinafter referenced as MANO.

As per **claim 24** (depending on claim 23), SALAMI does not expressly disclose that the error detector counts a number of successive frames that contain a transmission error. However, this feature is well known in the art as evidenced by MANO, who discloses flag group (S2, S1, S0) for counting the number of consecutive error frames (ET page5, line 9-33). Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify SALAMI by specifically providing counting a number of successive error frames, as taught by MANO, for the purpose of indicating an error state for the decode (MONO: ET page 6, paragraphs 1-2).

As per **claim 25** (depending on claim 24), SALAMI in view of MONO further discloses that the degree of enhancement performed by the vector modifier decreases as the number of successive frames that contain a transmission error increases (SALAMI: page 125, section III. A, equation (53) suggests that the degree of enhancement would be decreased when the number of successive error frames are increased).

As per **claim 26** (depending on claim 24), SALAMI in view of MONO further discloses that the degree of enhancement performed by the vector modifier is fixed to one degree and becomes zero when the number of successive frames that contain a transmission error reaches a predetermined number (SALAMI: page 125, section III. A, equation (53) suggests that the degree of enhancement would become zero when the attenuation is reach the lower bound, -14

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(fixed); and MONO: page 5, paragraph 3, 'a predetermined number M-1' for counting consecutive burst errors).

As per **claims 33-35** (depending on claim 32), the rejection is based on the same reason described for claims 24-26, respectively, because claims 33-35 recite same or similar limitation(s) as claims 24-26, respectively.

Conclusion

7. Any response to this office action should be mailed to:
Commissioner of Patents and Trademarks, P.O. Box 1450, Alexandria, VA22313-1450
or faxed to:
(703)-872-9314
Hand-delivered responses should be brought to:
Crystal Park II, 2121 Crystal Drive, Arlington. VA. Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I Han whose telephone numbers is (703) 305-5631. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7: p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richmond Devil, can be reached on (703) 305-6954.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

QH/he
March 17, 2004


RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER